

REMARKS/ARGUMENTS

Claims 16-20 and 22-28 are pending. Claims 1-15 and 21 are canceled without prejudice and without disclaimer. Claim 16 has been amended. New claims 22-28 have been added. The specification and drawings have been amended to correct minor informalities. No new matter has been introduced. Applicants believe the claims comply with 35 U.S.C. § 112.

Claims 16-20

Claims 16-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Shang et al. (US 5,788,778) in view of Izu et al. (US 5,411,591) and Felts et al. (US 4,888,199). The Examiner states that Shang et al. does not disclose the microwave arrestor and the controller, and cites Izu et al. for allegedly disclosing the microwave arrestor and cites Felts et al. for allegedly disclosing the controller.

Applicants respectfully submit that independent claim 16 as amended is patentable over the references because, for instance, they do not teach or suggest a plasma source for generating a plasma consisting of reactive radicals, the plasma source including a conductive plasma applicator defining an internal volume, the applicator having an input aperture and an output aperture, which are equipped with microwave arrestors disposed at said input aperture and at said output aperture to prevent egression of plasma from the internal volume through the input aperture and the output aperture.

Izu et al. discloses a "microwave shutter 150 operatively affixed to said microwave waveguide 142." Column 10, lines 54-55. "The waveguide 142 allows microwave energy to radiate from the entire aperture 146, through without more, the concentration of microwave energy is greatest at the end of the aperture nearest the source of microwave energy." Column 10, lines 46-50. The microwave shutter 150 is used to regulate the concentration of the microwave energy and consequently the density of the plasma. Column 10, lines 50-55.

Izu et al. discloses a microwave shutter 150 that is used to adjust the size of the aperture to regulate the concentration of the microwave energy. It does not teach or suggest providing microwave arrestors at both the input aperture and the output aperture of an applicator to prevent egression of plasma from the internal volume through the input aperture and the output aperture. Therefore, even if combined, the references do not disclose or suggest the claimed invention.

For at least the foregoing reasons, claim 16 and claims 17-20 depending therefrom are patentable.

Claims 22-28

Applicants respectfully submit that new independent claim 22 is patentable over the cited references including Shang et al. because, for instance, they do not teach or suggest mixing the flow of the reactive radicals and the diluent gas flow at a mixing location downstream of a location of forming the flow of the reactive radicals and anterior to the chamber to form a gas-radical mixture; and flowing the gas-radical mixture into the chamber.

Although Shang et al. appears to disclose mixing reactive radicals and diluent gas anterior to the chamber, it does not show mixing them at a mixing location downstream of a location of forming the flow of the reactive radicals and anterior to the chamber.

For at least the foregoing reasons, claim 22 and claims 23-28 depending therefrom are patentable.

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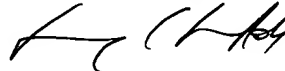
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CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



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Attachments

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